Dr. Werden said that "In disc lesions, the more lateral the herniation, the more diagnosis is a neurological problem, and the more midline the herniation or protrusion, the more the operative exposure and removal is a neurosurgical problem, and "In either instance, only spinal stability is an orthopedic problem." On that point, I can only say that the more lateral the lesion, the more definite the neurological findings—so much so that even a second year medical student should be able to diagnose the case. The operation is very simple, and the results are usually quite good. The more midline the lesion, the more obscure the neurological findings and the more the physical findings are confined to the back. In many cases, so localized are the findings that the neurosurgeon believes that it must be an orthopedic problem having something to do with instability. Why should we call one phase of the condition a neurosurgical problem and another phase of the condition an orthopedic problem? I believe the time has come that our teaching should be that the surgeon, whether he be an orthopedic surgeon or a neurosurgeon, should be able to diagnose herniation of a disc and administer treatment whether operative or nonoperative. I believe the neurosurgeon should be criticized from the standpoint that too often he will undertake operative treatment of disc disease but cannot be bothered with nonoperative treatment. Also, if the patient has residual back pain after operation, the case becomes an orthopedic problem. The orthopedic surgeon, on the other hand, should be criticized if he has failed to recognize certain physical findings which indicate intervertebral disc disease or if he has not correlated these physical findings with pathological changes that are evident on exploration of the neural canal. There are still too many orthopedists who will make a diagnosis of unstable lumbosacral joint when the true condition is a degenerative change in the disc. To illustrate, I quote from the reports of a prominent orthopedic surgeon and a prominent neurosurgeon who examined the same patient, who was subject to industrial compensation.

Orthopedic opinion: "She has evidence of an unstable lumbosacral joint as manifested by a narrowing of the fifth interspace. At the present time, I believe that she is disabled from work requiring lifting. She could, however, carry out work which did not require lifting and bending and stooping. I feel that she should be fitted with a back brace and that this back brace should be used for a period of four or five months, concurrently with which the patient should carry on exercises to strengthen the musculature of the back. It is probable that on this program she will recover without disability."

Neurosurgeon's opinion: "It is my opinion that this patient probably has a degeneration of her lumbosacral intervertebral disc which makes it vulnerable to recurrent protrusions through a thinned-out annular ligament. It is recommended that she be referred to an orthopedist and that he consider the use of some type of low back support. We do not believe that we have much to offer her inasmuch as there are no surgical measures indicated at this time."

It is unfair to the patient that he be subjected to this vacillation and indecision, because neither the neurosurgeon nor the orthopedist is capable of diagnosing and treating all phases of disc disease. The shunting of the patient back and forth leads to poor doctor-patient relationship and loss of confidence, and in the end probably has a great deal of effect on the amount of money awarded for partial permanent disability.

In conclusion, I want to challenge the author's statement, "In disc lesions only spinal stability is an orthopedic problem." I also want to challenge those orthopedists who will support or acquiesce to such an opinion. Either surgeon should treat all phases and stages of disc disease. How specialized a surgeon must have become, that he will only perform half of an operation!

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Laminectomy and Fusion For Disc Lesions

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As material for a discussion of treatment of intervertebral disc lesions by laminectomy and by fusion, records of 50 patients not previously operated upon, who were treated by one surgical team (the authors) in the years 1950-1955, were reviewed. No attempt was made to select the cases. Also reviewed were eight cases of patients who were dealt with after they had been treated elsewhere without satisfactory result.

Ten of the 50 cases in the first group were industrial and 40 were nonindustrial. (The nonindustrial cases included two in which the patients sought care after the termination of their industrial status.) No new methods were used. Laminectomy was done with the patient prone or lying on his side. Spine fusion was accomplished either by fitting "bone blocks" between the spines of the lumbar vertebrae and also

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placing multiple bone chips, or by the multiple bone chip method alone without attempt to destroy articulating facets. Laminectomy was done in 50 cases and spinal fusion in 14. In 19 cases there were enlarged or frankly extruded discs, but in the remainder of cases the pathological condition was less forthright —degenerated disc, nerve root adherent to the underlying disc material, enlarged edematous nerve, angulations of the sacrum in such a way as to cause stretching effect on the nerve posteriorly rather than anteriorly.

Results were classified as *good, fair* or *poor.* They were considered *good* if the patient had minimal ache and restriction of activity, was capable of doing his regular work and had only occasional mild recurrence; *fair* if the patient had some continuing complaint with acute recurrence necessitating conservative treatment from time to time but was able to continue work at regular assignments; *poor* if the patient could not successfully continue working and felt that the relief obtained was insufficient to warrant the discomforts of the operation. By these standards, results were as follows:

All Cases in the Series

	No. Cases	Per Cent
Good	25	50
Fair	16	32
Poor	9	18

Twelve Cases Involving Compensation or Litigation

	No. Cases	Per Cent
Good	5	42
Fair	3	25
Poor	4	33

Results of Spinal Fusion (14 Cases)

	Industrial	Nonindustrial	Total	Per Cent
Good	1	5	6	43
Fair	1	5	6	43
Poor	2	0	2	14

The proportion of acceptable results in the cases reviewed was somewhat higher than is generally reported in such series. One striking factor was the results in cases in which spinal fusion was done. Poor results in 14 per cent of cases is not high, considering the fact that the group included cases involving litigation or compensation. There were no failures in the cases in which these factors were not present. The results may be considered the more significant in light of the fact that fusion was done only in the most perplexing and difficult cases. In cases with a long history of pain, recurrent episodes and consultation with many physicians, the authors had poor response to conservative treatment either in the office or in the hospital. And in such cases when operation was carried out and the condition observed was not a large protruded or obviously extruded disc, but was rather degenerative protrusion, edematous adherent nerve, abnormal lumbosacral angle and/or unstable joint, fusion was resorted to.

All of the previously mentioned eight patients who had been treated elsewhere with unsatisfactory results had had laminectomy. Some of them had had more than one such operation. In four of those cases, one industrial and three nonindustrial, the authors carried out spinal fusion. Results were good in two nonindustrial cases and fair in the other two.

It was concluded from review of data on the two groups that there is no great difficulty in dealing with cases of gross protrusion or frank extrusion. Rather, the problems most often lie in treatment of "degenerative" conditions. From the data presented it would seem that greater application of the fusion operation in difficult cases, rather than laminectomy alone, could often bring about an acceptable result in cases in which without it the result would be poor.

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